Waste Reduction Goal Task Force
BRIEFING PAPER
For
Problem Wastes

Background:
The Tennessee General Assembly passed the Solid Waste Management Act of 1991, creating the *Waste Tire Program* and the *Household Hazardous Waste Program*. The *Used Oil Program* was established by the enactment of Used Oil Collection Act of 1993. The Problem Waste Section in the Division of Solid Waste Management is responsible for providing technical assistance and management for these programs.

Waste Tires: An estimated 5 million waste tires are generated annually in Tennessee and a substantial quantity of waste tires are currently stockpiled or illegally dumped across the state. In addition to littering the landscape and marring the natural beauty of Tennessee's hills and streams, the improper disposal of tires often results in health and environmental hazards:

- Tires provide convenient habitats for rodents,
- They hold water and become breeding grounds for disease carrying mosquitoes,
- Improperly stored tires present a fire hazard by trapping oxygen which feed the flames which emit noxious, air polluting smoke, and
- When tires are illegally burned, oils and soot can run off and contaminate both surface and ground water.
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Current State law prohibits the storage and/or disposal of waste tires without a permit. Whole tires are banned from disposal in landfills.

The Department provides $4.2million dollars annually (to be increased in FY08-09 to $5.5 million) in grants to counties for the collection and proper disposal (recycling) of waste tires. Approved beneficial end uses of tires are:

- Cement manufacturing;
- Burning of tire derived fuel in contained industrial boilers for the capture of energy;
- Production of tire-derived fuel, provided the Department approves the planned use of the processed tire material; or
- The crumbing or pyrolysis of tire material, provided the processor provides for the planned use of the processed tire material under such requirements established by the department;
- Recreational applications, including but not limited to, playgrounds, running tracks, and walking paths; or
- Any other use otherwise deemed appropriate by the Department of Environment and Conservation for which the Board has developed rules or the Department has developed policies.

These options are further defined below:

- Tire-derived fuels which can be used in utilities, paper mills, cement kilns, and other tire-to-energy facilities.

- Civil engineering projects including: road base, backfill in retaining walls or embankments, crash prevention, soil amendment, landfill drainage, French drain fill material, and subsurface sewage systems.
- Asphalt paving
- Pyrolysis where rubber is decomposed into recoverable components: oil and gas.
- Other products including molded rubber for shoes, dock bumpers, mats, etc.

Household Hazardous Waste: Tennessee has a mobile Household Hazardous Waste (HHW) contractor that goes from county to county on Saturdays from mid-March to mid-November to collect problem wastes such as old chemicals, oil based paint, paint thinner, outdated computers or TVs, oil, grease, auto fluids, old gasoline, adhesives, driveway sealant, roofing tar, lawn and garden pesticides and fertilizers, mercury thermostats and thermometers, florescent tubes and bulbs, and many other items. This service is for households only. No commercial, institutional, or agri-business chemicals will be accepted (the Tennessee Department of Agriculture runs an Agricultural Pesticide Waste Collection program to accept pesticides from farmers). Additionally, NO explosives, ordnance, ammunition, radioactive devices or materials, medical or infectious waste, dead animals, automotive gas tanks, will be accepted.

Tennessee's Mobile Household Hazardous Waste Collection Service has been in operation since 1993. Since then, there have been over 850 one-day collection events with over 225,000 families bringing in some 16 million pounds of household hazardous waste materials for proper disposal. This program is funded by the Solid Waste Management Fund at $1,100,000 per year.

T.C.A. 68-211-828 provides for competitive grants for **permanent** HHW collection facilities in municipalities with a population of one hundred thousand (100,000) or more in counties with a population of two hundred eighty-seven thousand seven hundred (287,700) or more. According to the most recent census the four municipalities that meet these standards are Chattanooga, Memphis, Knoxville, and Nashville. Memphis in partnership with Shelby County is the latest recipient to receive a grant to construct a permanent facility as provided for in the Act. This facility is expected to open in late 2007. Amendments to the Solid Waste Management Act in 2007 provides for a second tier of permanent facilities to be established in counties with large populations or high participation at HHW collection events.

Permanent HHW facilities are a superior way of collecting household hazardous waste in highly populated areas because they are more convenient, cost-effective, and provide for a smoother operation than mobile collections. Numerous counties have reached a point whereby their collection events are large enough to warrant a permanent facility. Convenience is the primary improvement, i.e. if a resident cannot attend the one-day collection event the material will either continue to be dangerously stockpiled or improperly disposed with regular solid waste. Permanent facilities provide residents with the opportunity to properly manage their HHW on a year-round basis. Also permanent HHW facilities can reduce and minimize waste as well as recycle and reuse materials to an extent that is not possible with mobile collections. Additionally, large one-day collection events require a significant level of support: EMS, law enforcement, volunteers, solid waste handling equipment, in addition to the amount of time and money spent planning and advertising the event by the host organization.

Used Oil: The Used Oil Collection Act of 1993, enacted to prevent the mismanagement of used oil, makes it unlawful for any person to dispose of used oil where in may harm the environment.

- Recycling used oil is good for the environment and the economy.
- Tennessee's do-it-yourselfers (DIYers) generate more than one million gallons of used motor oil each year.
- If not disposed of properly, used oil can interfere with the operation of sewer systems and can easily get into our groundwater and streams. One gallon of used oil can contaminate one million gallons of drinking water.
- Re-refining used oil takes only about one-third the energy of refining crude oil to lubricant quality.
- It takes 42 gallons of crude oil, but only one gallon of used oil, to produce 2 $^{l/2}$ quarts of new, high grade lubricating oil.

Tennessee maintains a toll-free telephone hot-line and database of 1,037 used oil collection sites for use in determining the nearest collection center for citizens. Used oil collection centers will take up to 5 gallons per day from DIYers. Used oil collected at HHW events costs the program $0.19 a pound and in FY07 the mobile event received 91,316 pounds for a cost of $17,350. Grants are provided on an annual basis to fund the establishment of collection centers. Funding for the grants comes from the Used Oil Collection Fund.

Electronic Waste: Modern society has produced a wide array of electronic devices that have been a boon to productivity and personal enjoyment. The rapid pace of techno-logical advancement continues to offer opportunities for new and upgraded electronic equipment; however, this electronic waste, or e-waste, is now a fast growing segment of Tennessee's solid waste stream. E-waste is a general category for electronic products facing displacement or replacement that are hazardous due to the toxic metals present with their internal materials, coatings, and glass. E-wastes contain metals and other materials that can be hazardous to human health and the environment if not properly managed. EPA studies indicate that 40% of the lead in U.S. landfills comes from discarded electrical and electronic products, including: personal computers, monitors, televisions, keyboards, printers, telephones, typewriters, calculators, copiers, fax machines, and audio equipment. Other estimates are that 80% of the hazardous waste entering Class 1 landfills come from electronic wastes.

Recycling or recovering e-waste makes good sense since there are some valuable commodities worth capturing plus there are substances of concern that should be kept out of landfills. In addition to the traditional commodities in computers and their components (glass, metals, and plastics), precious metals like gold and platinum, along with toxic heavy metals including cadmium, nickel, and lead are found. Most recyclers utilize an integrated approach that seeks to refurbish whole systems, gather working parts for reuse, and generate a usable scrap material from the remainder and locate markets for the remainder.

E-waste is collected at the one day household hazardous waste events. Because E-waste is now a valuable commodity, several vendors in Tennessee and surrounding states pay for the materials, or ship free of charge. The Department has been encouraging local governments to host these free collection events to minimize the impact on the HHW Collection Events.

Paint: Latex and oil paints comprise 59% of the household hazardous waste stream in the mobile collection events. In FY06, 760,080 pounds were collected, and at a cost of 0.26 per pound, the cost to the program for this one year was $198,140 for a waste stream that is not hazardous or that is moderately hazardous. Oil based paint may have hazardous characteristics and thus may require specialized handling and 370, 635 pounds of oil based paint were recovered in FY06 at $0.40 a pound the cost was $148, 254. Since latex paint has no hazardous characteristics, the Department is encouraging local governments to manage this waste stream locally as several methods are available. Options include recycling the paint for use by government agencies (schools, jails, etc) or selling it at a reduced cost. The local government may encourage citizens to dry the paint and include it in their normal solid waste stream. Another option at the local level is that latex paint material be dried in masse and disposed of in the Class 1 landfill. The most cost effective handling of latex paint likely is a combination of these methods that makes sense at the local level.

Paint recycling program equipment is being given in the annual recycling equipment grants to encourage local governments to manage paint away from the HHW events.

Issues:
To Be Determined By The Task Force.

Focus Questions:

1. Should problem wastes be included in any waste reduction goal calculation?

2. Should the HHW mobile events manage waste when systems are readily available to local governments like paint consolidation/recycling?

3. Should the state provide funding to jumpstart local efforts in waste reduction of these problem wastes?

4. Should there be a predisposal fee on each problem waste to properly manage them?

5. Should the state provide statewide service or develop mechanisms to assist local governments in establishing local sustainable facilities and programs.

6. Should the state require all local jurisdictions to provide local controls and management of problem wastes?